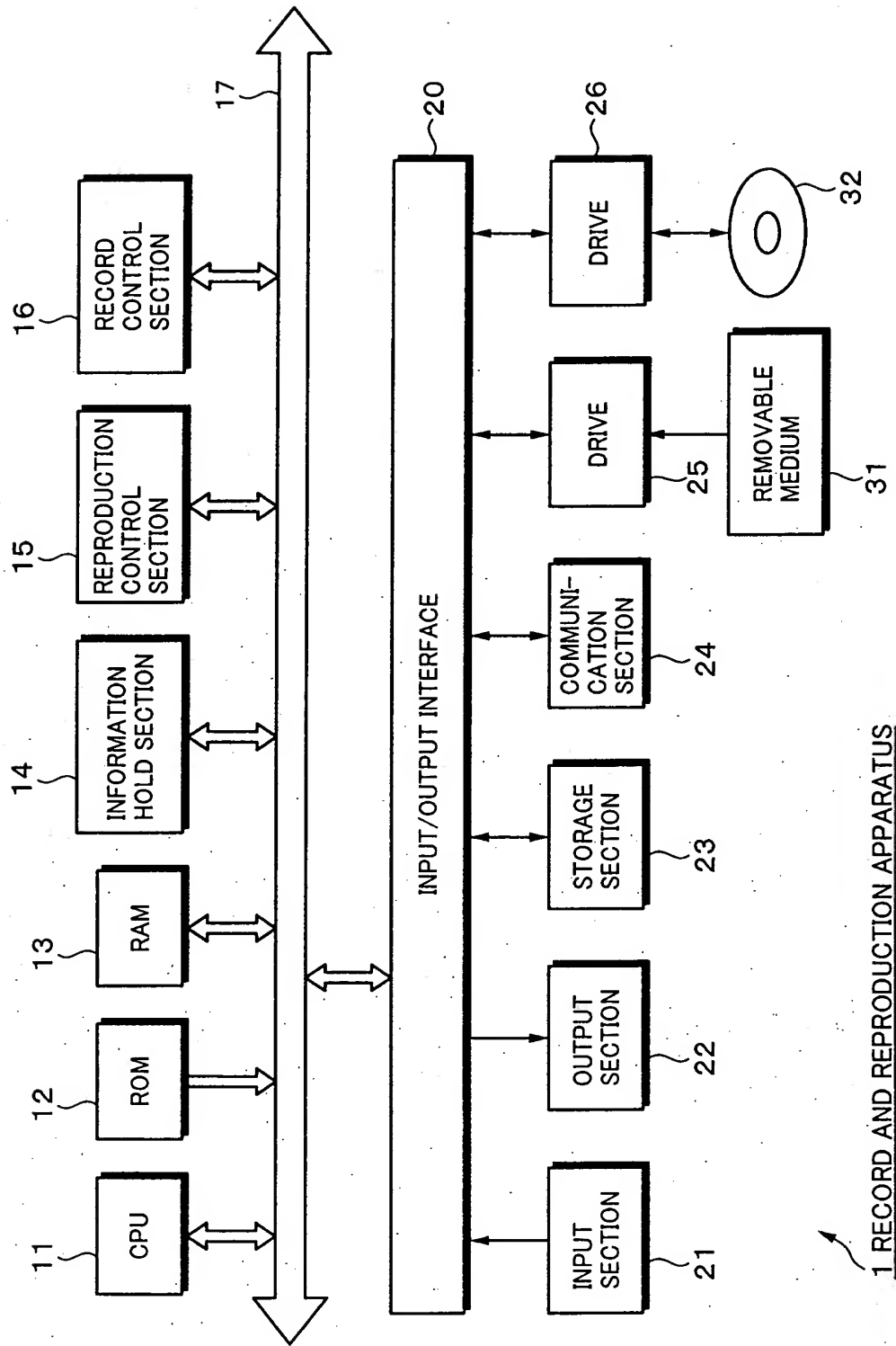


Fig. 1



1 RECORD AND REPRODUCTION APPARATUS

Fig. 2

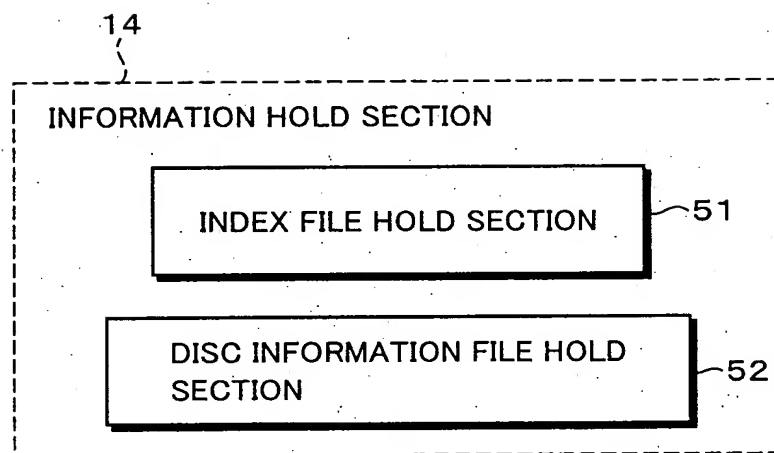


Fig. 3

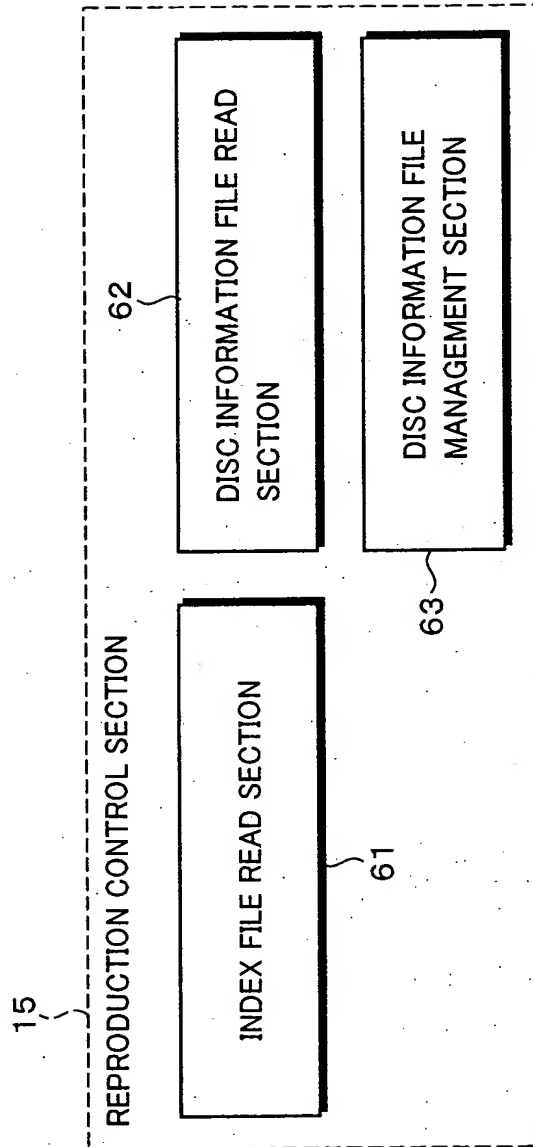


Fig. 4

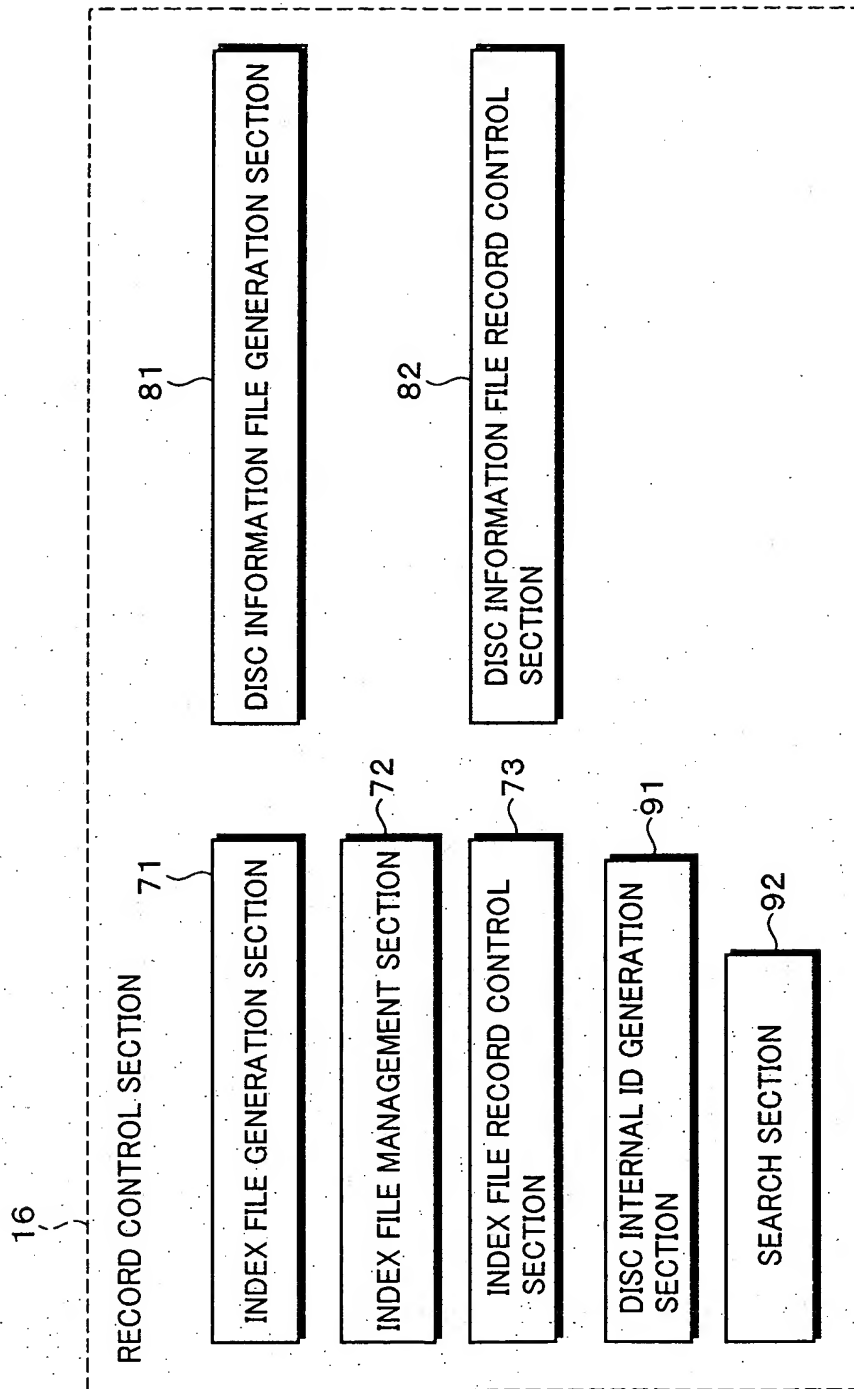


Fig. 5

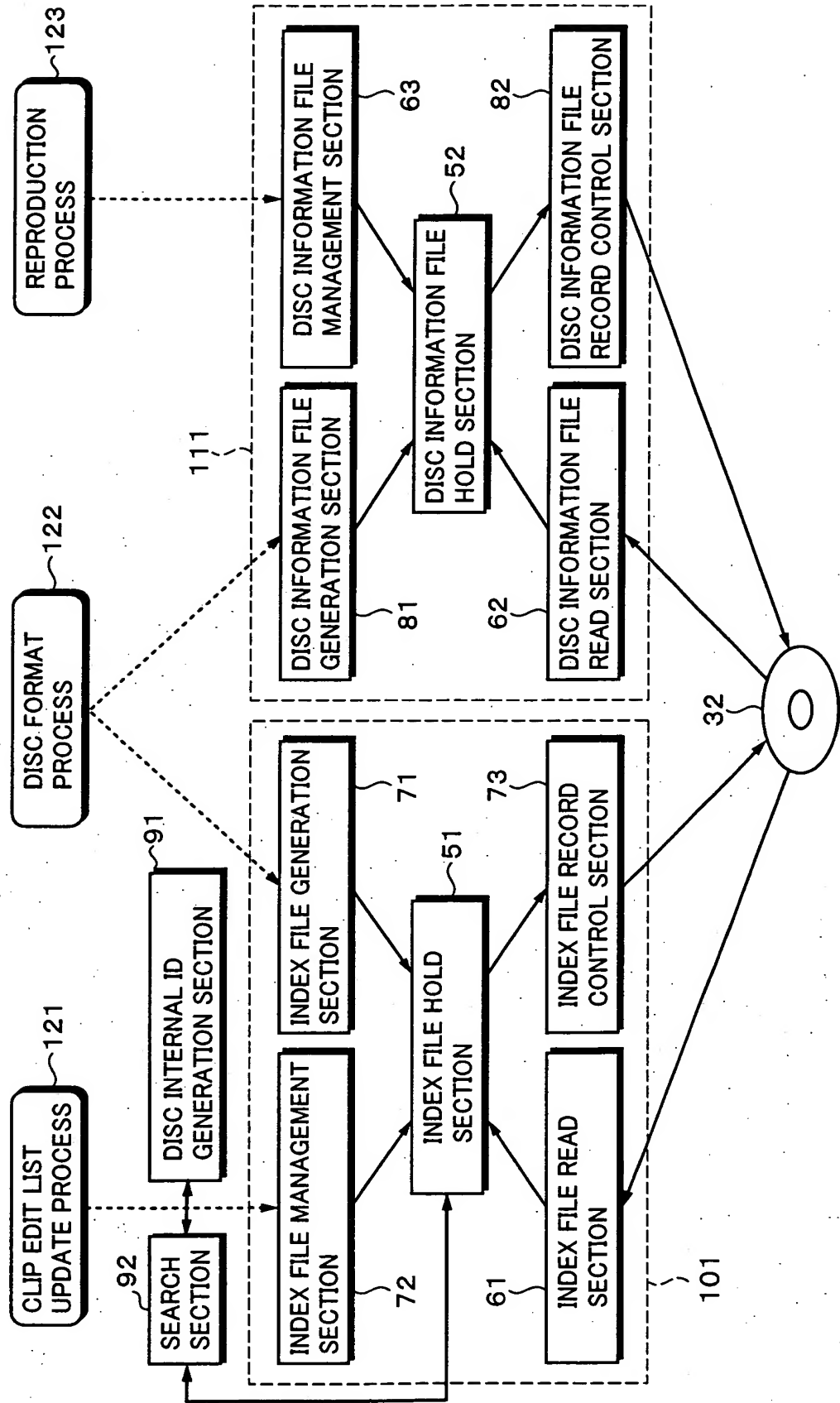
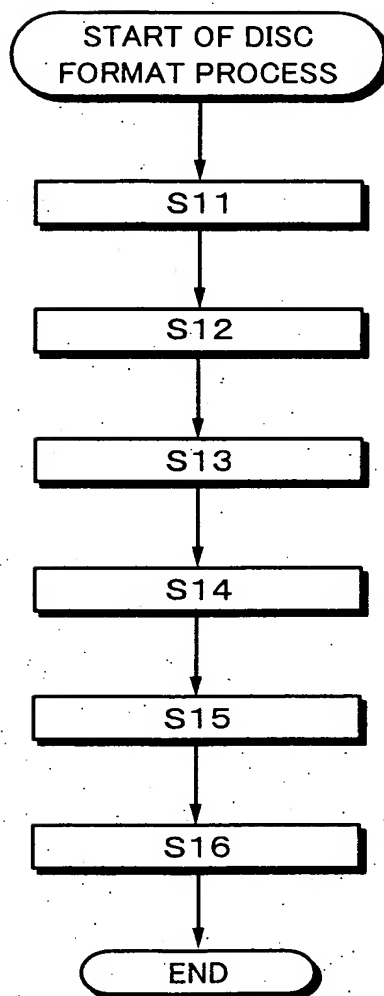


Fig. 6



```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <indexFile xmlns="urn:schemas-professionalDisc:index"
3   indexId="0123456789ABCDEF0123456789ABCDEF">
4   <clipTable path="/PROAV/CLPR/">
5     <!-- Normal Clip -->
6     <clip id="C0001" umid="0D121300000000000001044444484EEEE00E0188E130B"
7       file="C0001C01.SMI" fps="59.94i" dur="12001" ch="4" aspectRatio="4:3">
8       <video umid="0D121300000000000001044444484EEEE00E0188E130B"
9         file="C0001V01.MXF" type="DV25_411" header="65536"/>
10      <audio umid="0D121300000000000001044444484EEEE00E0188E130B"
11        file="C0001A01.MXF" type="LPCM16" header="65536" trackDst="CH1"/>
12      <audio umid="0D121300000000000001044444484EEEE00E0188E130B"
13        file="C0001A02.MXF" type="LPCM16" header="65536" trackDst="CH2"/>
14      <audio umid="0D121300000000000001044444484EEEE00E0188E130B"
15        file="C0001A03.MXF" type="LPCM16" header="65536" trackDst="CH3"/>
16      <audio umid="0D121300000000000001044444484EEEE00E0188E130B"
17        file="C0001A04.MXF" type="LPCM16" header="65536" trackDst="CH4"/>
18      <subStream umid="0D121300000000000001044444484EEEE00E0188E130B"
19        file="C0001S01.MXF" type="PD-SubStream" header="65536"/>
20      <meta file="C0001M01.XML" type="PD-Meta"/>
21      <meta file="C0001M02.TXT" type="key:0123456789ABCDEF"/>
22      <rtmeta file="C0001R01.BIN" type="std2k" header="65536"/>
23    </clip>
24    <!-- Partial Deleted Clip -->
25    <clip id="C0002" umid="0D121300000000000001044444484EEEE00E0188E130B"
26      file="C0002C01.SMI" fps="59.94i" dur="4000" ch="4" aspectRatio="4:3">
27      <video umid="0D121300000000000001044444484EEEE00E0188E130B"
28        file="C0002V01.MXF" type="IMX50" header="80000"/>
29      <audio umid="0D121300000000000001044444484EEEE00E0188E130B"

```

Fig. 8

```

1 file="C0002A01.MXF" type="LPCM16" header="100000" trackDst="CH1"/>
2 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
3 file="C0002A02.MXF" type="LPCM16" header="100000" trackDst="CH2"/>
4 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
5 file="C0002A03.MXF" type="LPCM16" header="100000" trackDst="CH3"/>
6 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
7 file="C0002A04.MXF" type="LPCM16" header="100000" trackDst="CH4"/>
8 <subStream umid="0D1213000000000000104444484EEEE00E0188E130B"
9 file="C0002S01.MXF" type="PD-SubStream" header="90000"
10 clipBegin="8"/>
11 <meta file="C0002M01.XML" type="PD-Meta"/>
12 <rtmeta file="C0002R01.BIM" type="std2k" header="70000"/>
13 </clip>
14 <!-- Refered Clip -->
15 <clip id="C0003" umid="0D1213000000000000104444484EEEE00E0188E130B"
16 file="C0003C01.SMI" fps="59.94i" dur="100000" ch="4" aspectRatio="4:3"
17 refer="E0001 E0002 E0003">
18 <video umid="0D1213000000000000104444484EEEE00E0188E130B"
19 file="C0003V01.MXF" type="IMX50" header="65536"/>
20 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
21 file="C0003A01.MXF" type="LPCM16" header="65536" trackDst="CH1"/>
22 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
23 file="C0003A02.MXF" type="LPCM16" header="65536" trackDst="CH2"/>
24 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
25 file="C0003A03.MXF" type="LPCM16" header="65536" trackDst="CH3"/>
26 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
27 file="C0003A04.MXF" type="LPCM16" header="65536" trackDst="CH4"/>
28 <subStream umid="0D1213000000000000104444484EEEE00E0188E130B"
29 file="C0003S01.MXF" type="PD-SubStream" header="65536"/>

```


Fig. 9

```

1  <meta file="C0003M01.XML" type="PD-Meta"/>
2  <rtmeta file="C0003R01.BIM" type="std2k" header="65536"/>
3  </clip>
4  <!-- Long GOP -->
5  <clip id="C0004" umid="0D1213000000000000104444484EEEE00E0188E130B"
6  file="C0004C01.SMI" fps="59.94i" dur="12001" ch="4" aspectRatio="16:9"
7  referer="E0004">
8  <video umid="0D1213000000000000104444484EEEE00E0188E130B"
9  file="C0004V01.MXF" type="MPEG2HD25_1440_MP@HL" header="65536"/>
10 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
11 file="C0004A01.MXF" type="LPCM16" header="65536" trackDst="CH1"/>
12 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
13 file="C0004A02.MXF" type="LPCM16" header="65536" trackDst="CH2"/>
14 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
15 file="C0004A03.MXF" type="LPCM16" header="65536" trackDst="CH3"/>
16 <audio umid="0D1213000000000000104444484EEEE00E0188E130B"
17 file="C0004A04.MXF" type="LPCM16" header="65536" trackDst="CH4"/>
18 <subStream umid="0D1213000000000000104444484EEEE00E0188E130B"
19 file="C0004S01.MXF" type="PD-SubStream" header="65536"/>
20 <meta file="C0004M01.XML" type="PD-Meta"/>
21 <meta file="C0004I01.XML" type="PD-PP"/>
22 <rtmeta file="C0004R01.BIM" type="std2k" header="65536"/>
23 </clip>
24 </clipTable>
25 <editlistTable path="/PROAV/EDTR/">
26 <editlist id="E0001" umid="0D1213000000000000104444484EEEE00E0188E130B"
27 file="E0001E01.SMI" dur="500" fps="59.94i" ch="4" aspectRatio="4:3">
28 <meta file="E0001M01.XML" type="PD-Meta"/>

```

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

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Fig. 11

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <discinfo xmlns="urn:schemas-professiona|Disc:discinfo">
3   <history>
4     <clip id="C0003" ftc="smpte-30-drop=00:30:12:23" />
5     <editlist id="E0001" ftc="smpte-30-drop=00:00:15" />
6     <tape id="C0003" ftc="smpte-30-drop=00:02:23:12" />
7     <editlist id="E0004" ftc="smpte-30-drop=00:00:10:02" />
8     <clip id="C0002" ftc="smpte-30-drop=00:01:02:03" />
9     <clip id="C0004" ftc="smpte-30-drop=00:05:43:21" />
10   </history>
11 </discinfo>
```

Fig. 12

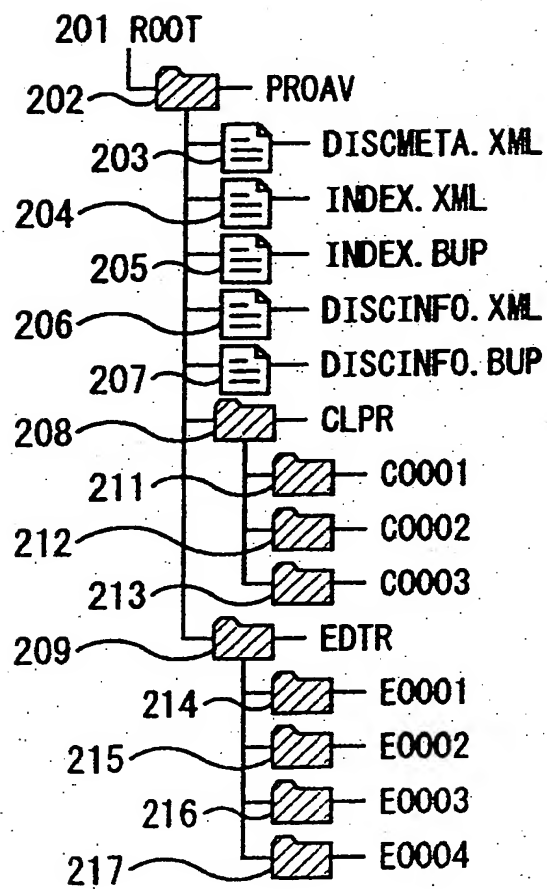


Fig. 13

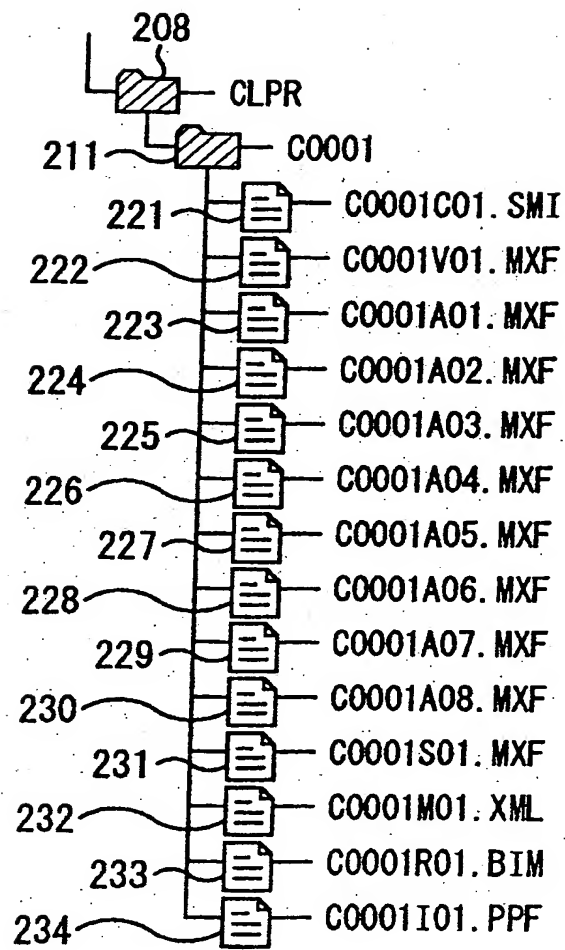


Fig. 14

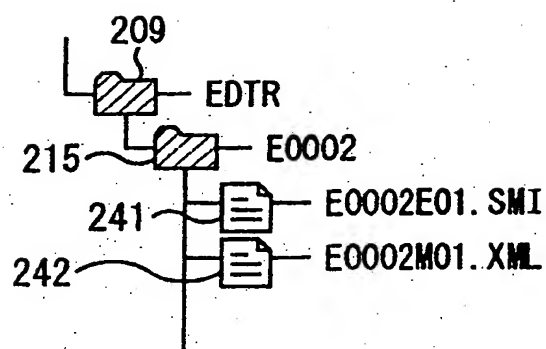


Fig. 15

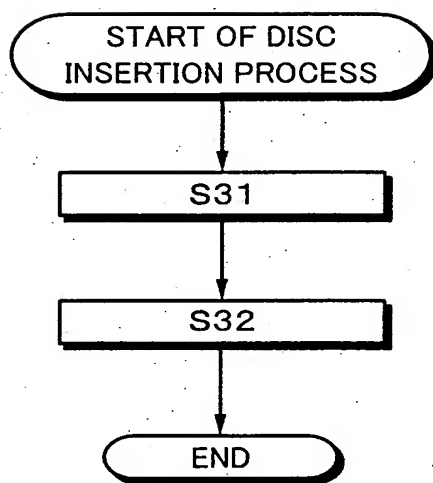


Fig. 16

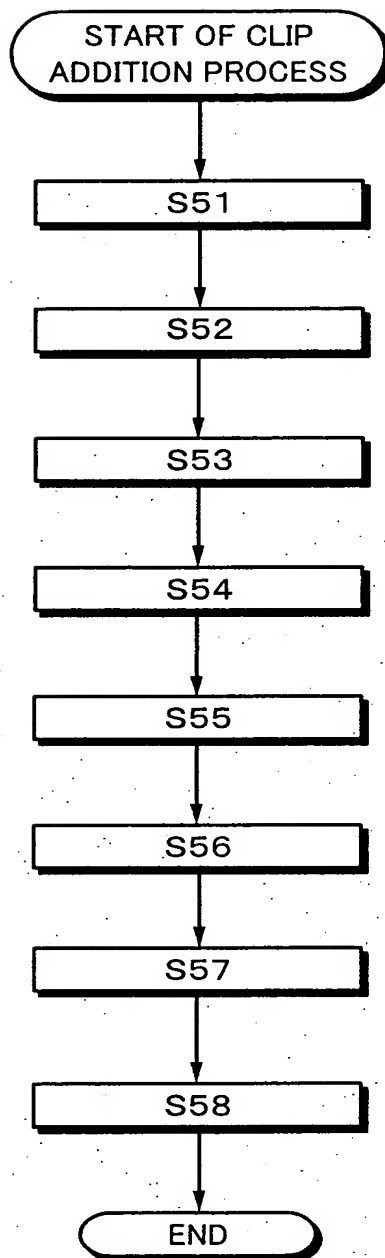


Fig. 17

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <smil xmlns="urn:schemas-professiona|Disc:edl:clipInfo">
3   <head>
4     <metadata type="Meta">
5       <!-- nonrealtime meta -->
6       <NRMeta xmlns="urn:schemas:proDisc:nrt">
7         <ref src="C0001M01.XML"/>
8       </NRMeta>
9     </metadata>
10   </head>
11   <body>
12     <par>
13       <switch>
14         <!-- main stream -->
15         <par systemComponent="IMX50">
16           <video
17             src="urn:smp|e:umid:060A2B3401010501010D12130000000123456789ABCDEF0123456789ABCDEF"
18             type="IMX50"/>
19           <audio
20             src="urn:smp|e:umid:060A2B3401010501010D1213000000123456789ABCDEF0123456789ABCDEF0"
21             type="LPCM16" trackDst="CH1"/>
22           <audio
23             src="urn:smp|e:umid:060A2B3401010501010D121300000023456789ABCDEF0123456789ABCDEF01"
24             type="LPCM16" trackDst="CH2"/>
25           <audio
26             src="urn:smp|e:umid:060A2B3401010501010D12130000003456789ABCDEF0123456789ABCDEF012"
27             type="LPCM16" trackDst="CH3"/>
28           <audio
29             src="urn:smp|e:umid:060A2B3401010501010D1213000000456789ABCDEF0123456789ABCDEF0123"

```

Fig. 18

```

1 type="LPCM16" trackDst="CH4"/>
2   <audio
3 src="urn:smppte:umid:060A2B3401010501010D121300000056789ABCDEF0123456789ABCDEF01234"
4 type="LPCM16" trackDst="CH5"/>
5   <audio
6 src="urn:smppte:umid:060A2B3401010501010D12130000006789ABCDEF0123456789ABCDEF012345"
7 type="LPCM16" trackDst="CH6"/>
8   <audio
9 src="urn:smppte:umid:060A2B3401010501010D1213000000789ABCDEF0123456789ABCDEF0123456"
10 type="LPCM16" trackDst="CH7"/>
11   <audio
12 src="urn:smppte:umid:060A2B3401010501010D121300000089ABCDEF0123456789ABCDEF01234567"
13 type="LPCM16" trackDst="CH8"/>
14 </par>
15 <!-- sub stream -->
16 <ref
17 src="urn:smppte:umid:060A2B3401010501010D12130000009ABCDEF0123456789ABCDEF012345678"
18 type="SubStream" systemComponent="SubStream"/>
19 </switch>
20 <!-- realtime meta -->
21 <metastream src="C0001R01.BIM" type="required2k"/>
22 </par>
23 </body>
24 </smil>

```

Fig. 19

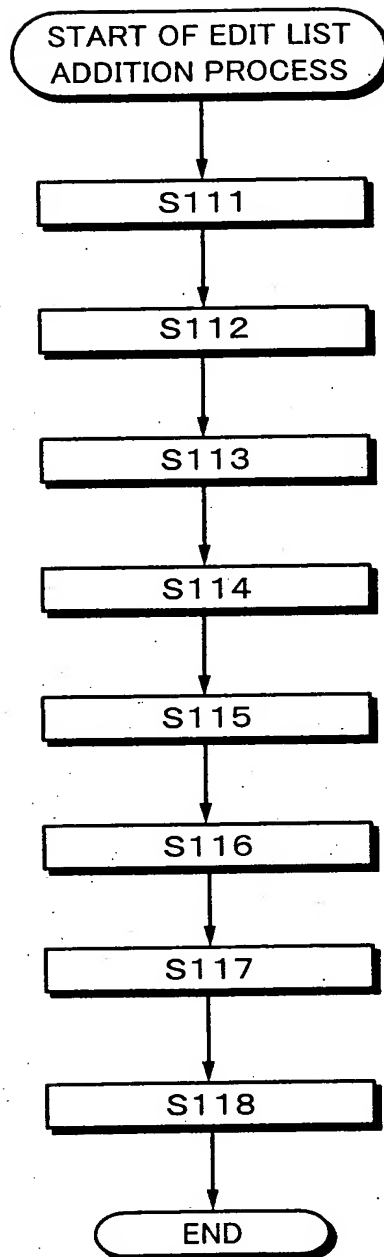


Fig. 20

```

1  <?xml version="1.0" encoding="UTF-8"?>
2  <smil xmlns="urn:schemas-professionalDisc:editList">
3    <head>
4      <metadata type="Meta">
5        <!-- nonrealtime meta -->
6        <NRMeta xmlns="urn:schemas:professionalDisc:nrt">
7          <ref src="E002M01.XML"/>
8        </NRMeta>
9      </metadata>
10     </head>
11     <body>
12       <par>
13         <!-- Clip1 -->
14         <ref
15           src="urn:smpte:umid:060A2B3401010501010D1213000000FEDCBA9876543210FEDCBA9876543210"
16           type="edlDoc" begin="smpte-30=00:00:00:00" clipBegin="smpte-30=00:00:00:00" clipEnd="smpte-
17             30=00:10:00:00"/>
18         <!-- Clip2 -->
19         <ref
20           src="urn:smpte:umid:060A2B3401010501010D1213000000EDCBA9876543210FEDCBA9876543210F"
21           type="edlDoc" begin="smpte-30=00:10:00:00" clipBegin="smpte-30=00:02:00:00" clipEnd="smpte-
22             30=00:03:30:00"/>
23       </par>
24     </body>
25   </smil>

```

Fig. 21

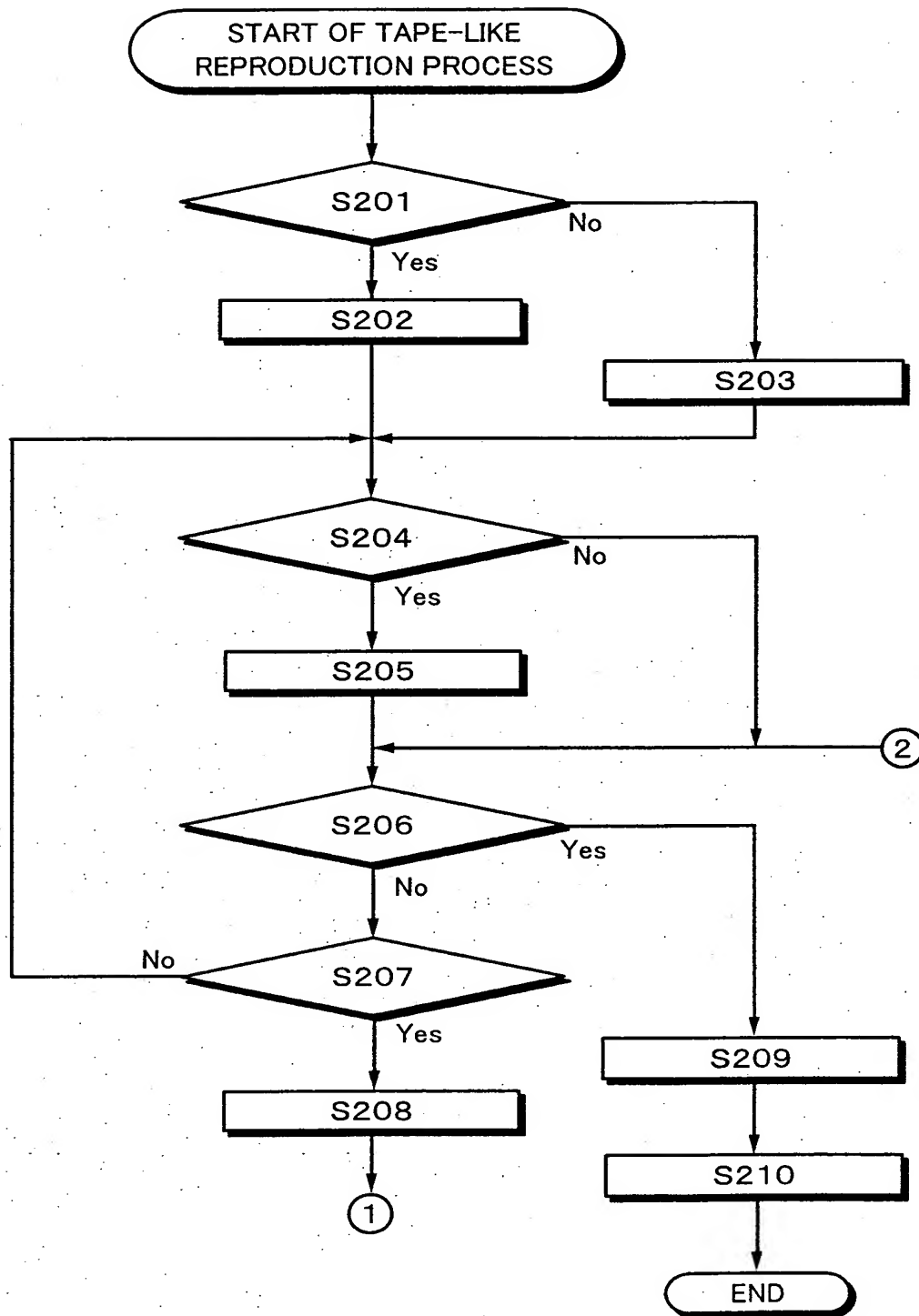


Fig. 22

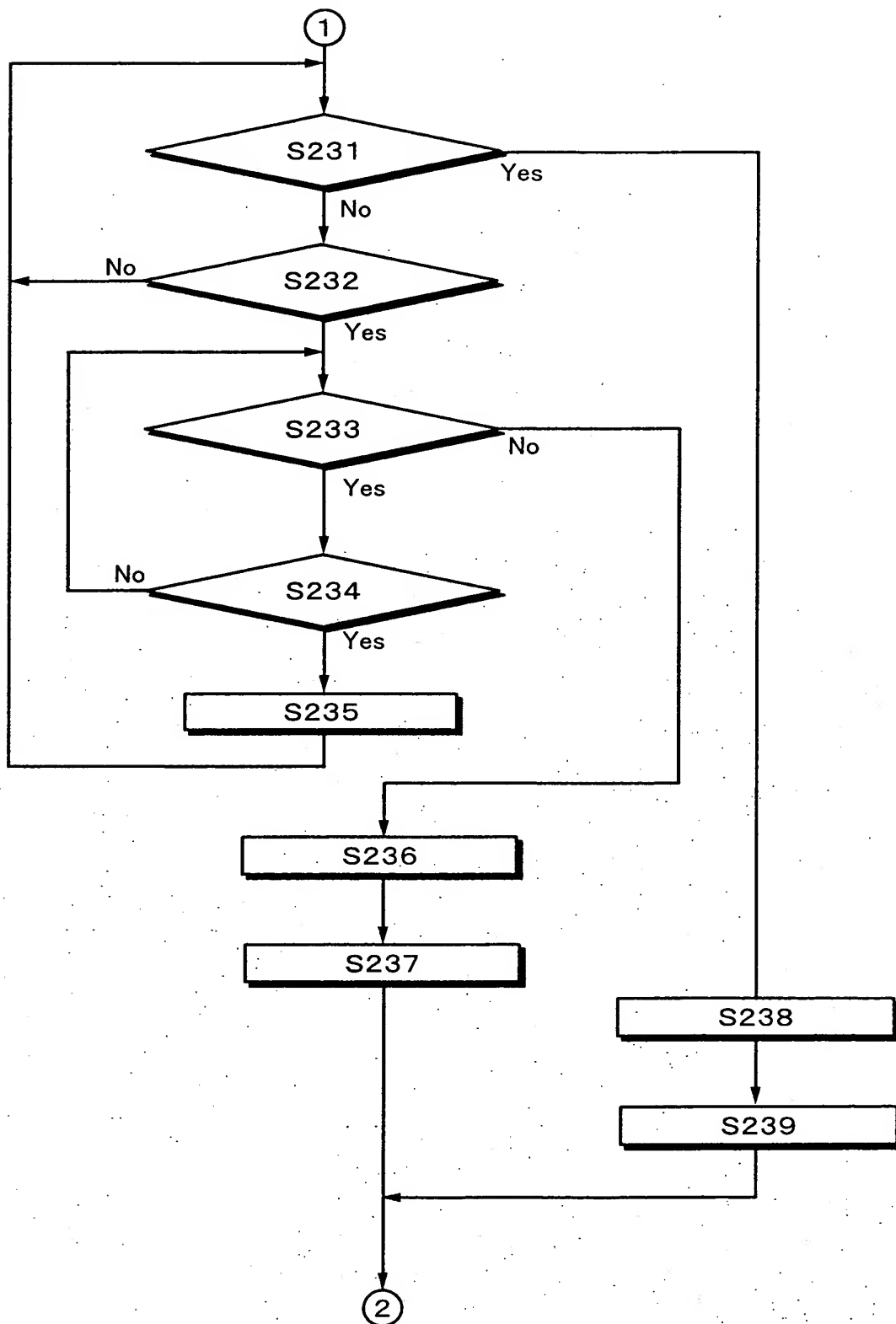


Fig. 23

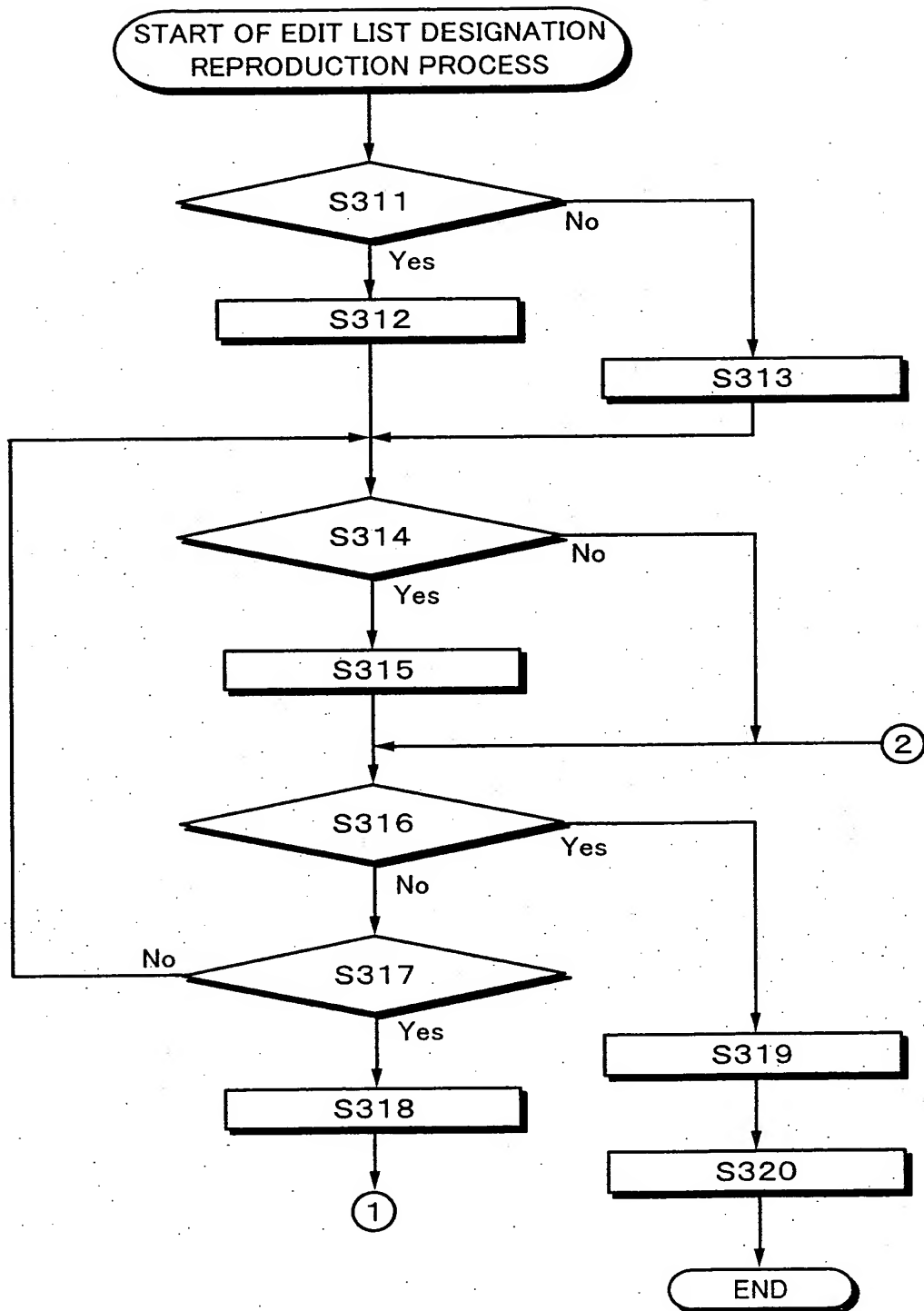


Fig. 24

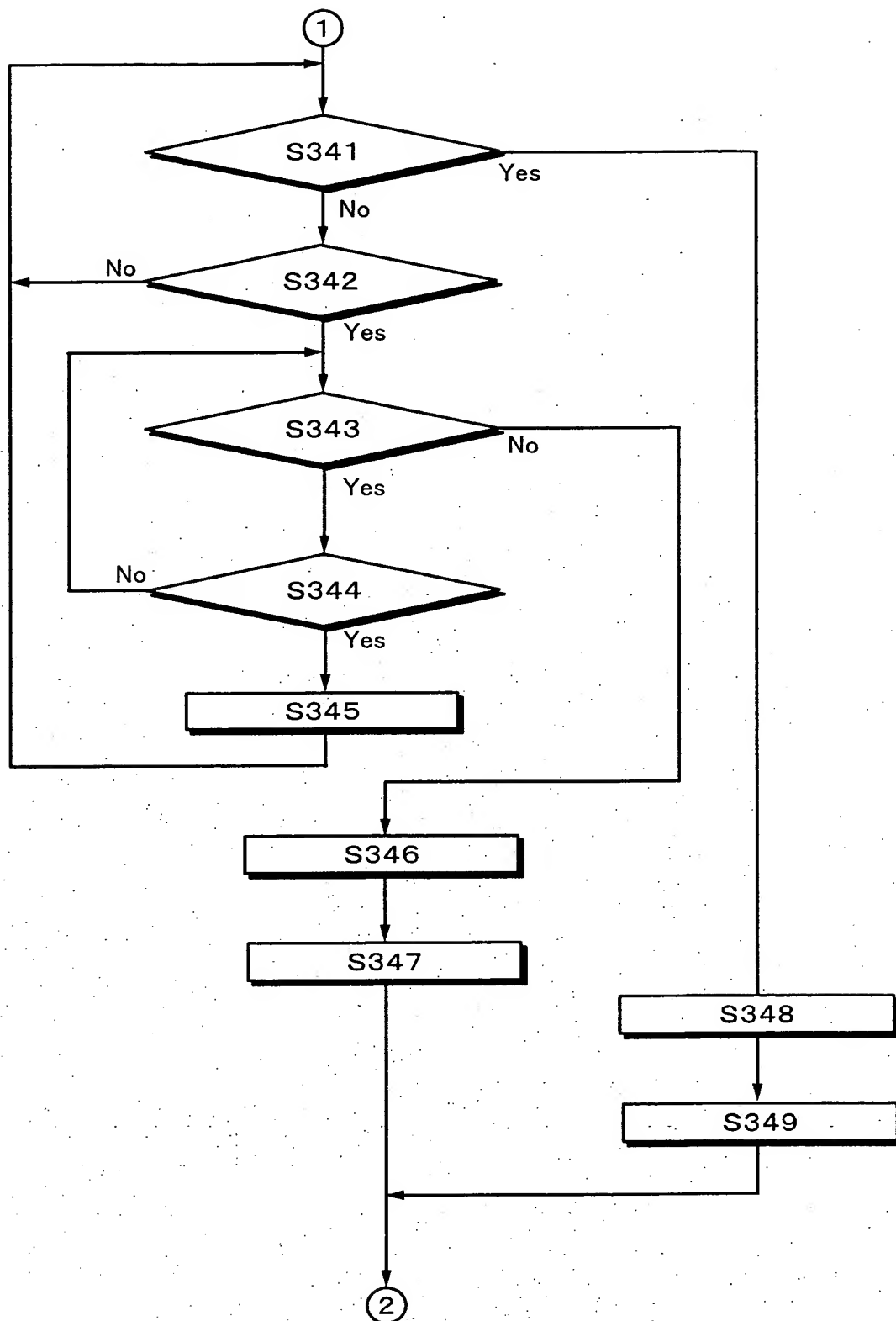


Fig. 25

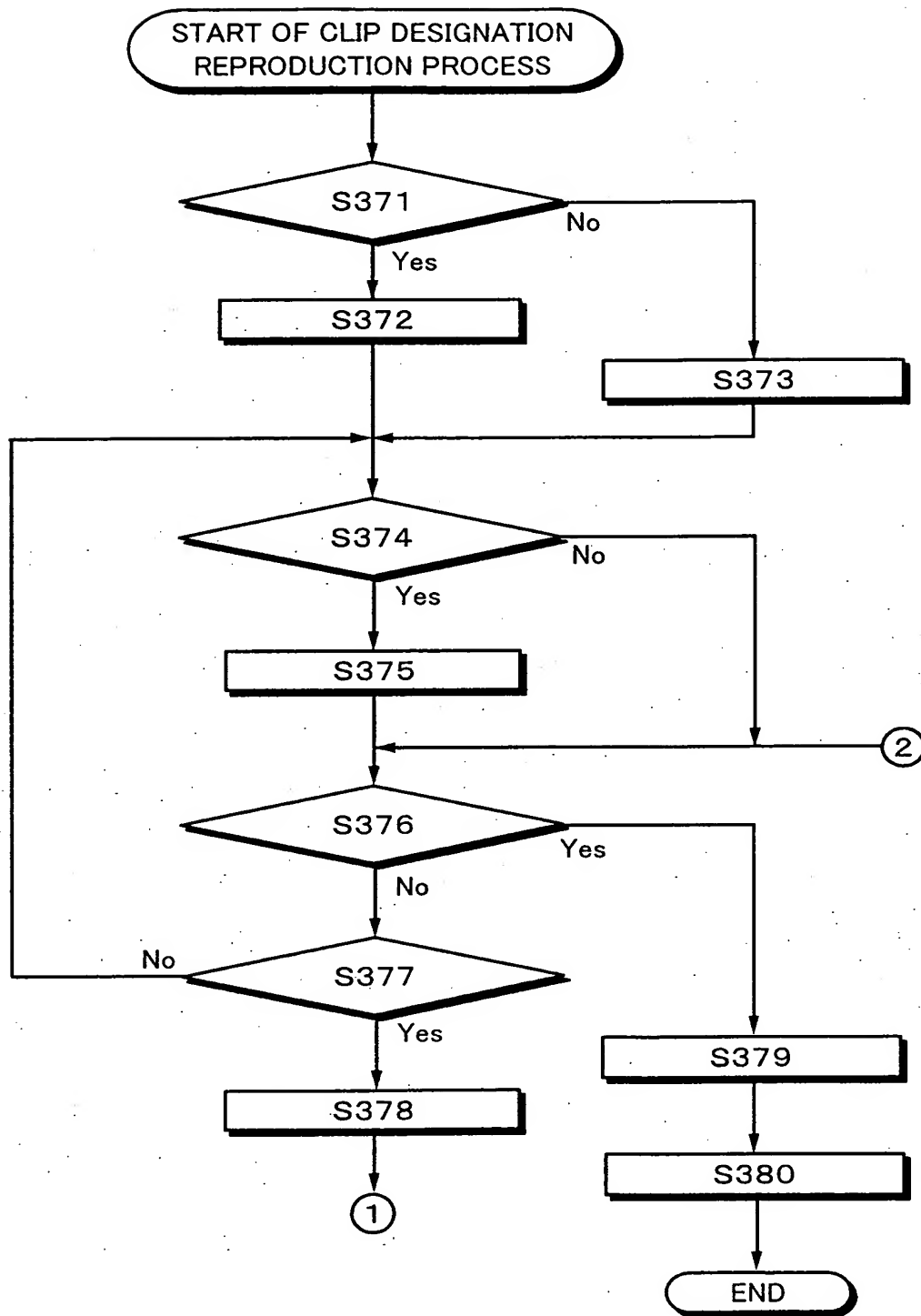


Fig. 26

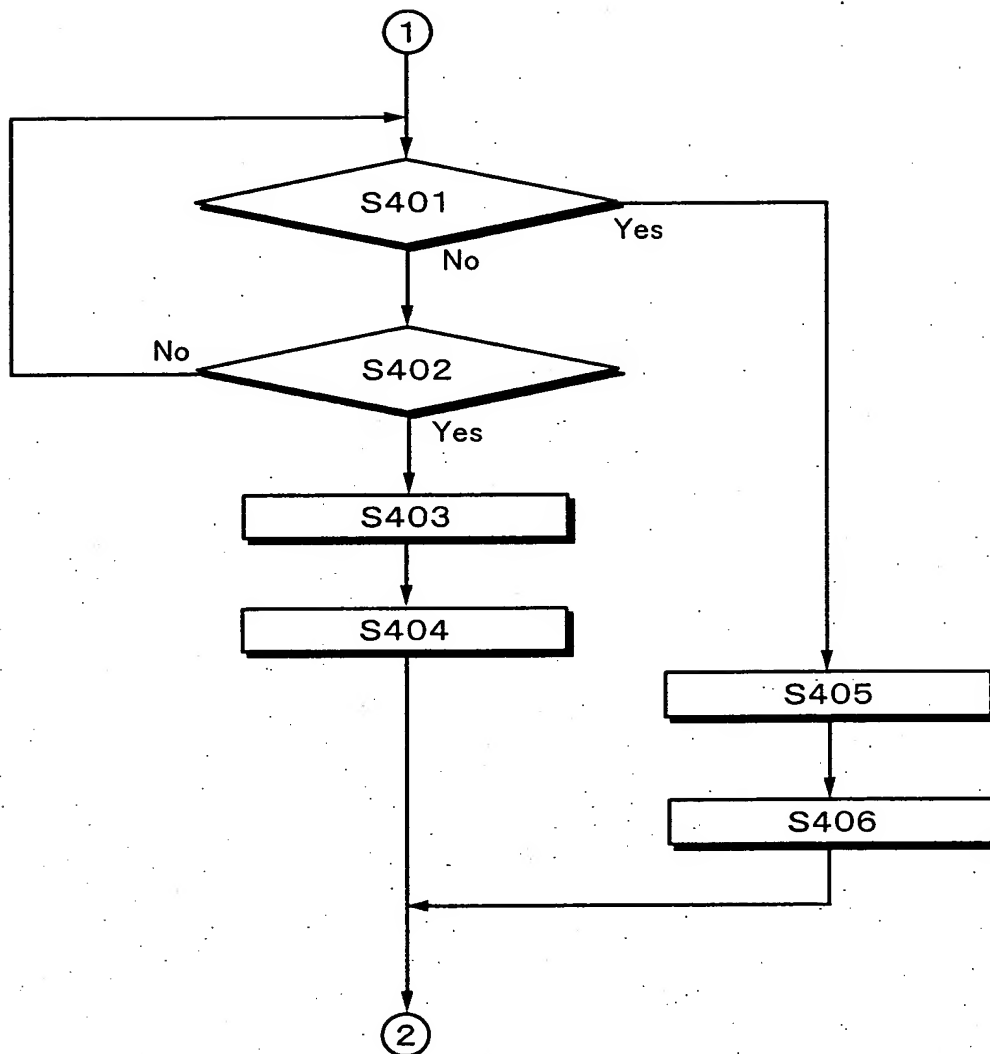


Fig. 27

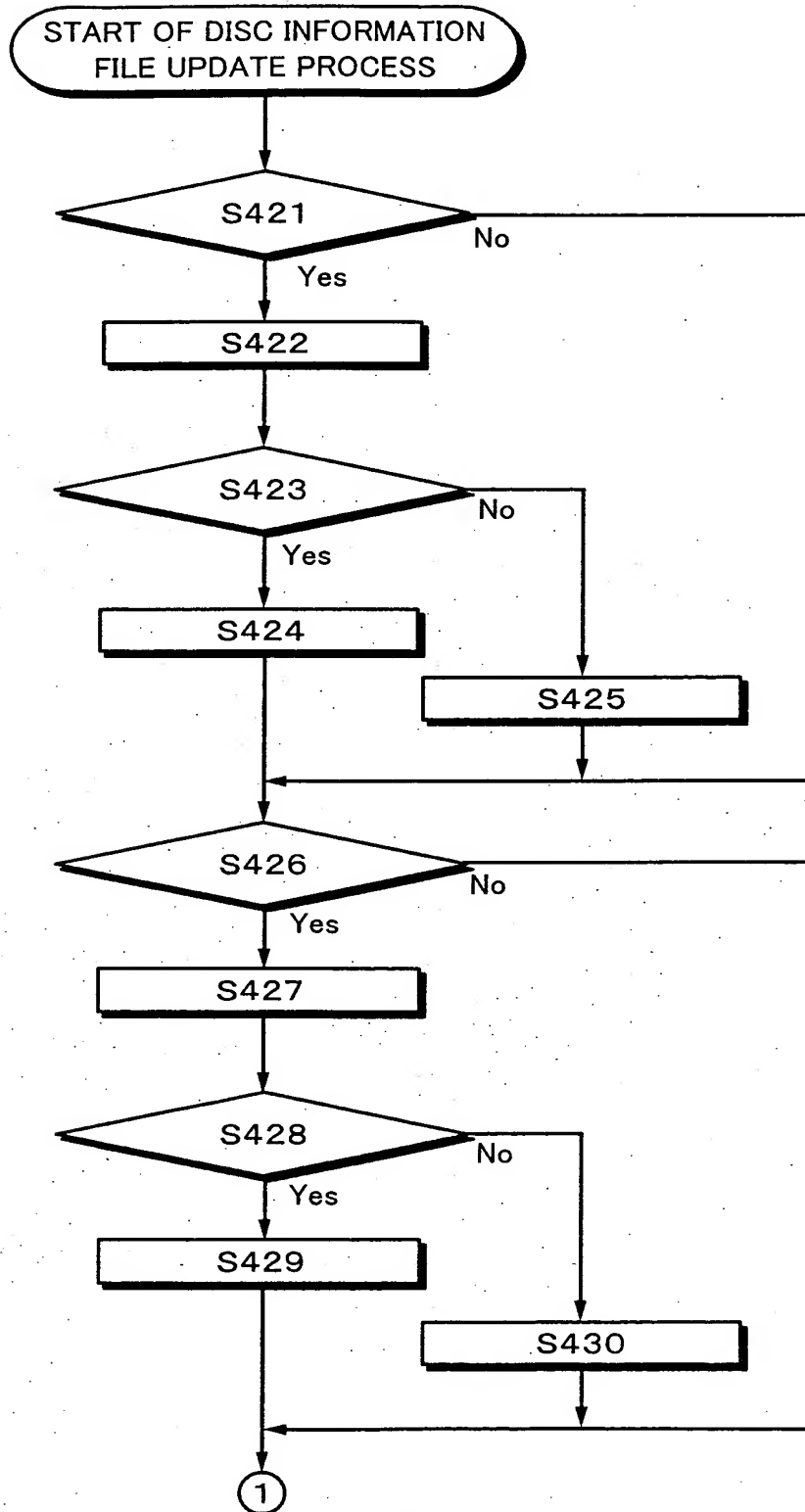


Fig. 28

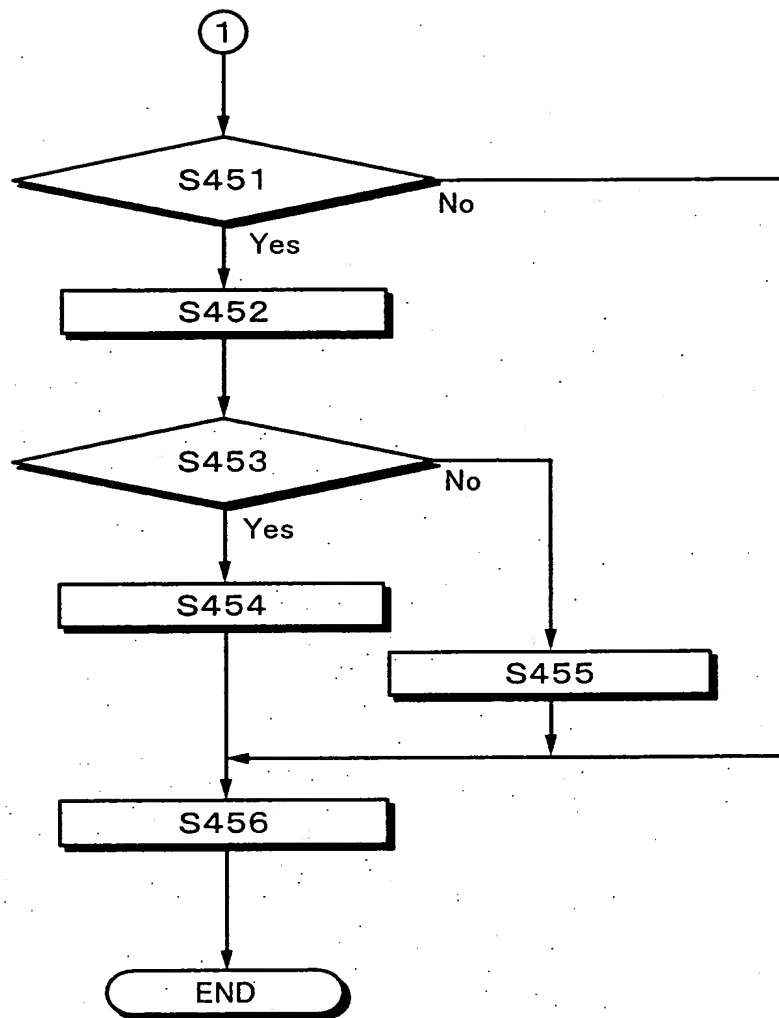
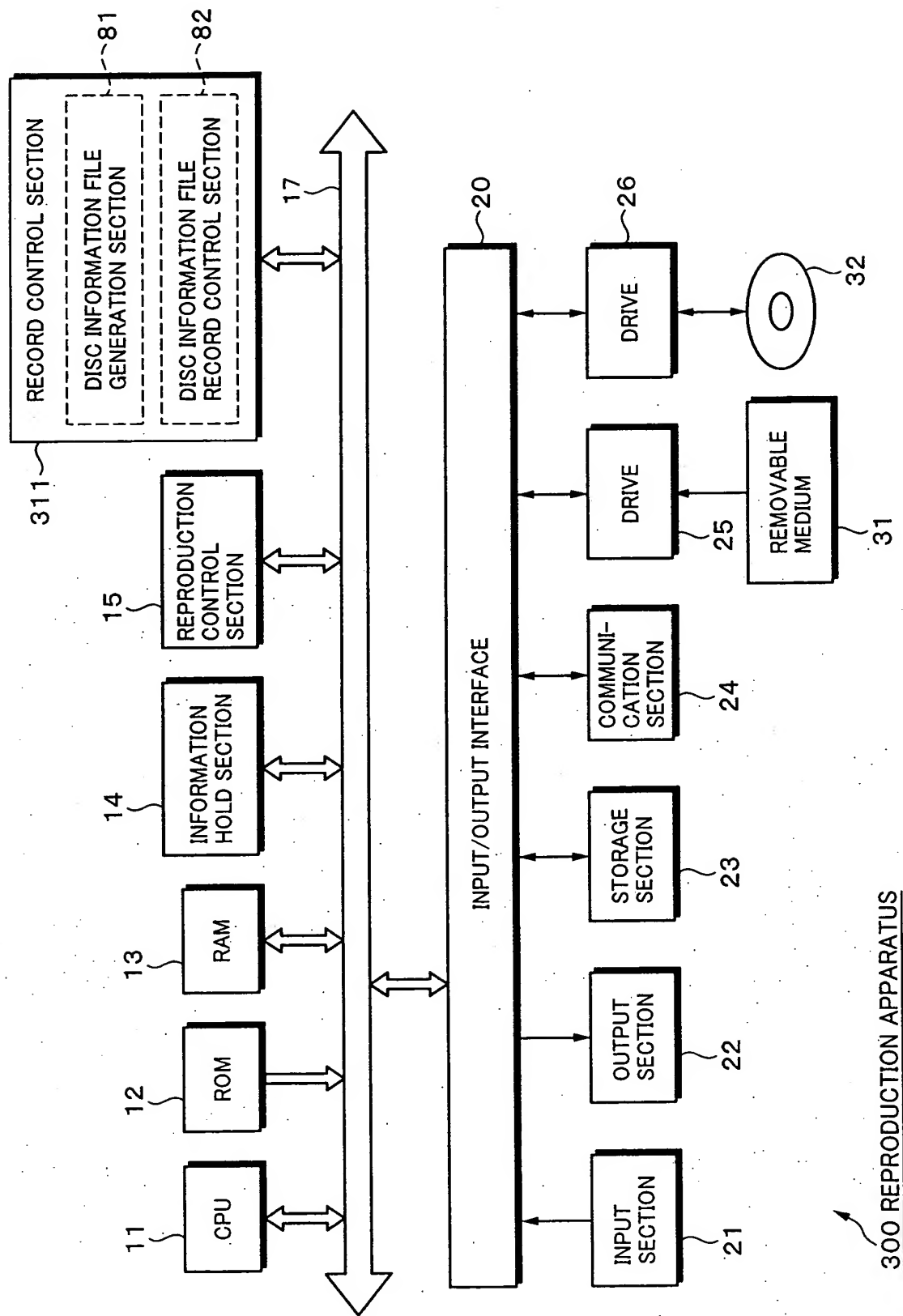
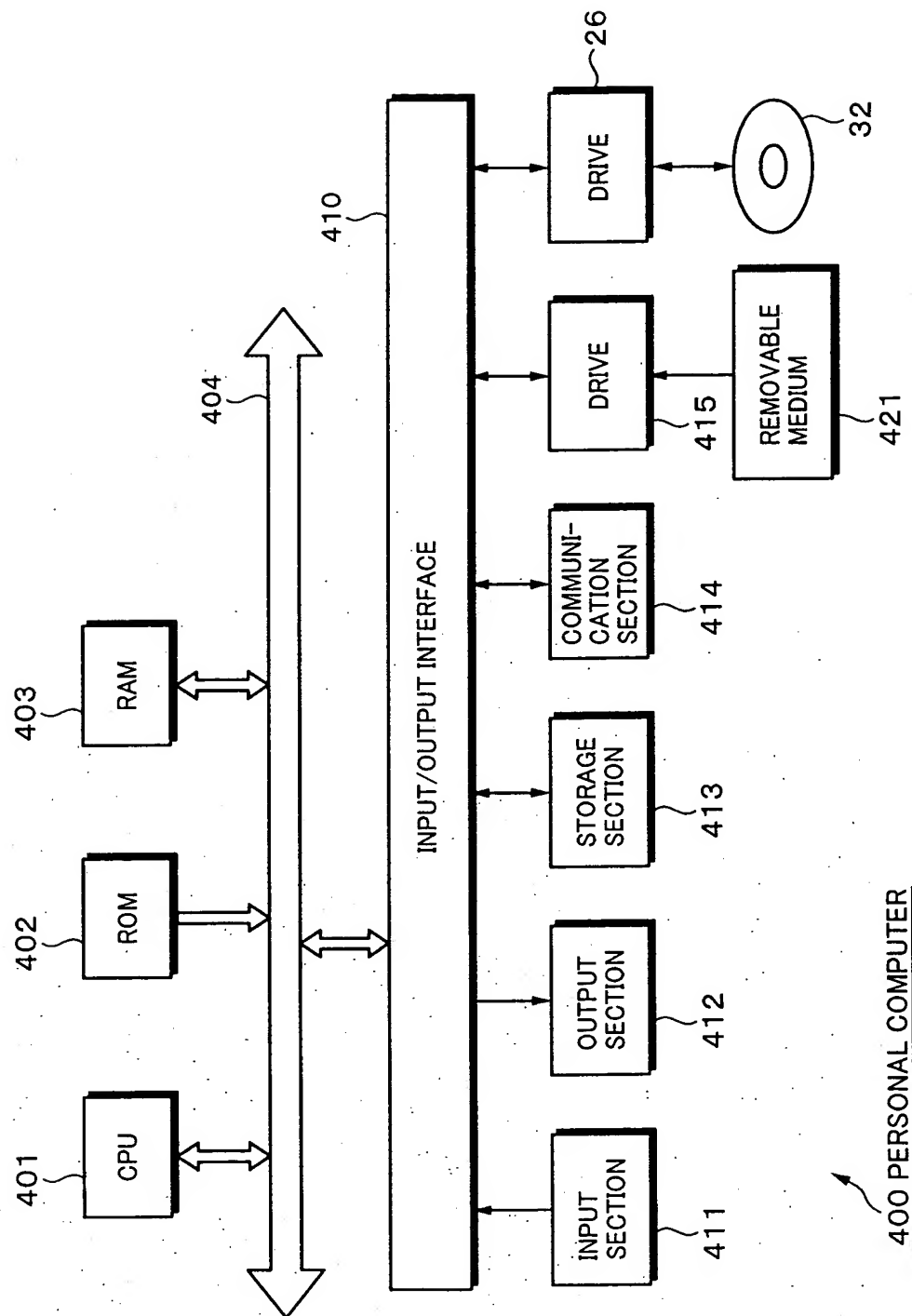


Fig. 29



300 REPRODUCTION APPARATUS

Fig. 30



DESCRIPTION OF REFERENCE NUMERALS

1	RECORD AND REPRODUCTION APPARATUS
14	INFORMATION HOLD SECTION
15	REPRODUCTION CONTROL SECTION
16	RECORD CONTROL SECTION
32	DISC
51	INDEX FILE HOLD SECTION
52	DISC INFORMATION FILE HOLD SECTION
61	INDEX FILE READ SECTION
62	DISC INFORMATION FILE READ SECTION
63	DISC INFORMATION FILE MANAGEMENT SECTION
71	INDEX FILE GENERATION SECTION
72	INDEX FILE MANAGEMENT SECTION
73	INDEX FILE RECORD CONTROL SECTION
81	DISC INFORMATION FILE GENERATION SECTION
82	DISC INFORMATION FILE RECORD CONTROL SECTION
91	DISC INTERNAL ID GENERATION SECTION
92	SEARCH SECTION
204	INDEX FILE
206	DISC INFORMATION FILE
300	REPRODUCTION APPARATUS
311	RECORD CONTROL SECTION
S11	PERFORM UDF FORMAT PROCESS.
S12	GENERATE PROAV ROOT DIRECTORY.
S13	GENERATE CLIP ROOT DIRECTORY.

S14 GENERATE EDIT LIST ROOT DIRECTORY.

S15 GENERATE INDEX FILE.

S16 GENERATE DISC INFORMATION FILE.

S31 READ INDEX FILE.

S32 READ DISC INFORMATION FILE.

S51 GENERATE CLIP DIRECTORY.

S52 GENERATE CLIP INFORMATION FILE.

S53 GENERATE FILE FOR EACH TYPE DATA THAT COMPOSE CLIP.

S54 ADD CLIP ELEMENT TO CLIP TABLE.

S55 REFERENCE CLIP TABLE AND SEARCH IT FOR MAXIMUM VALUE OF DISC
INTERNAL ID.

S56 GENERATE NEW DISC INTERNAL ID ACCORDING TO MAXIMUM VALUE OF DISC
INTERNAL ID.

S57 ADD NEW DISC INTERNAL ID TO CLIP ELEMENT ADDED TO CLIP TABLE
AND ASSOCIATE DISC INTERNAL ID WITH UMID AND FILE NAME OF CLIP
INFORMATION FILE CONTAINED IN CLIP ELEMENT.

S58 RECORD INDEX FILE.

S111 GENERATE EDIT LIST DIRECTORY.

S112 GENERATE EDIT LIST FILE.

S113 GENERATE EACH FILE THAT COMPOSES EDIT LIST.

S114 ADD EDIT LIST ELEMENT TO EDIT LIST TABLE.

S115 REFERENCE EDIT LIST TABLE AND SEARCH IT FOR MAXIMUM VALUE OF
DISC INTERNAL ID

S116 GENERATE NEW DISC INTERNAL ID ACCORDING TO MAXIMUM VALUE OF DISC
INTERNAL ID.

S117 ADD NEW DISC INTERNAL ID TO EDIT LIST ELEMENT ADDED TO EDIT LIST
TABLE AND ASSOCIATE DISC INTERNAL ID WITH UMID AND FILE NAME
OF EDIT LIST INFORMATION FILE CONTAINED IN EDIT LIST ELEMENT.

S118 RECORD INDEX FILE.

S201 DOES REPRODUCTION HISTORY CONTAIN HISTORY RECORD OF TAPE-LIKE
REPRODUCTION ?

S202 READ FRAME OF CLIP DESIGNATED IN REPRODUCTION HISTORY WITH DISC
INTERNAL ID AS REPRODUCTION START FRAME ACCORDING TO CLIP
TABLE.

S203 READ TOP FRAME OF FIRST CLIP AS REPRODUCTION START FRAME
ACCORDING TO CLIP TABLE.

S204 HAS REPRODUCTION START POSITION CHANGE COMMAND BEEN ACCEPTED ?

S205 READ FRAME OF CLIP DESIGNATED WITH DISC INTERNAL ID AS
REPRODUCTION START FRAME ACCORDING TO CLIP TABLE.

S206 IS PROCESS COMPLETED ?

S207 HAS REPRODUCTION START COMMAND BEEN ACCEPTED ?

S208 START REPRODUCTION FROM REPRODUCTION START FRAME ACCORDING TO
CLIP TABLE.

S209 UPDATE DISC INFORMATION FILE.

S210 EXECUTE COMPLETION PROCESS.

S231 HAS REPRODUCTION STOP COMMAND BEEN ACCEPTED ?

S232 HAS CURRENT CLIP BEEN REPRODUCED ?

S233 IS THERE NEXT CLIP ?

S234 CAN CLIP BE REPRODUCED ?

S235 REPRODUCE DESIGNATED CLIP ACCORDING TO CLIP TABLE.

S236 STOP REPRODUCTION.

S237 READ TOP FRAME OF FIRST CLIP AS REPRODUCTION START FRAME
ACCORDING TO CLIP TABLE.

S238 STOP REPRODUCTION.

S239 DESIGNATE STOP FRAME AS REPRODUCTION START FRAME.

S311 DOES REPRODUCTION HISTORY CONTAIN REPRODUCTION HISTORY RECORD
OF EDIT LIST TO BE REPRODUCED ?

S312 READ FRAME DESIGNATED IN REPRODUCTION HISTORY RECORD WITH DISC
INTERNAL ID AS REPRODUCTION START FRAME.

S313 READ TOP FRAME OF FIRST CLIP AS REPRODUCTION START FRAME
ACCORDING TO EDIT LIST.

S314 HAS REPRODUCTION START POSITION CHANGE COMMAND BEEN ACCEPTED ?

S315 READ DESIGNATED FRAME AS REPRODUCTION START FRAME ACCORDING TO
EDIT LIST.

S316 IS PROCESS COMPLETED ?

S317 HAS REPRODUCTION START COMMAND BEEN ACCEPTED ?

S318 START REPRODUCTION FROM REPRODUCTION START FRAME ACCORDING TO
EDIT LIST.

S319 UPDATE DISC INFORMATION FILE.

S320 EXECUTE COMPLETION PROCESS.

S341 HAS REPRODUCTION STOP COMMAND BEEN ACCEPTED ?

S342 HAS CURRENT CLIP BEEN REPRODUCED ?

S343 IS THERE NEXT CLIP ?

S344 CAN CLIP BE REPRODUCED ?

S345 REPRODUCE DESIGNATED CLIP ACCORDING TO EDIT LIST.

S346 STOP REPRODUCTION.

S347 READ TOP FRAME OF FIRST CLIP AS REPRODUCTION START FRAME
ACCORDING TO EDIT LIST.

S348 STOP REPRODUCTION.

S349 DESIGNATE STOP FRAME AS REPRODUCTION START FRAME.

S371 DOES REPRODUCTION HISTORY CONTAIN REPRODUCTION HISTORY RECORD
OF CLIP TO BE REPRODUCED ?

S372 READ FRAME DESIGNATED IN REPRODUCTION HISTORY WITH DISC
INTERNAL ID AS REPRODUCTION START FRAME.

S373 READ TOP FRAME AS REPRODUCTION START FRAME ACCORDING TO CLIP
INFORMATION FILE.

S374 HAS REPRODUCTION START POSITION CHANGE COMMAND BEEN ACCEPTED ?

S375 READ DESIGNATED FRAME AS REPRODUCTION START FRAME ACCORDING TO
CLIP INFORMATION FILE.

S376 IS PROCESS COMPLETED ?

S377 HAS REPRODUCTION START COMMAND BEEN ACCEPTED ?

S378 START REPRODUCTION FROM REPRODUCTION START FRAME ACCORDING TO
CLIP INFORMATION FILE.

S379 UPDATE DISC INFORMATION FILE.

S380 EXECUTE COMPLETION PROCESS.

S401 HAS REPRODUCTION STOP COMMAND BEEN ACCEPTED ?

S402 HAS CLIP BEEN REPRODUCED ?

S403 STOP REPRODUCTION.

S404 READ TOP FRAME AS REPRODUCTION START FRAME.

S405 STOP REPRODUCTION.

S406 DESIGNATE STOP FRAME AS REPRODUCTION START FRAME.

S421 TAKE-LIKE REPRODUCTION ?

S422 GENERATE HISTORY RECORD OF TAKE-LIKE REPRODUCTION WITH DISC
INTERNAL ID.

S423 DOES CURRENT REPRODUCTION HISTORY CONTAIN HISTORY RECORD OF
TAKE-LIKE REPRODUCTION ?

S424 DELETE OLD HISTORY RECORD OF TAKE-LIKE REPRODUCTION AND
REGISTER GENERATED HISTORY RECORD OF TAKE-LIKE REPRODUCTION AT
POSITION OF NEWEST HISTORY RECORD.

S425 DELETE OLDEST HISTORY RECORD OF REPRODUCTION HISTORY AND
REGISTER GENERATED HISTORY RECORD OF TAKE-LIKE REPRODUCTION AT
POSITION OF NEWEST HISTORY RECORD.

S426 EDIT LIST DESIGNATION REPRODUCTION ?

S427 GENERATE HISTORY RECORD OF EDIT LIST DESIGNATION REPRODUCTION
WITH DISC INTERNAL ID.

S428 DOES CURRENT REPRODUCTION HISTORY CONTAIN HISTORY RECORD OF
EDIT LIST DESIGNATION REPRODUCTION FOR SAME EDIT LIST.

S429 DELETE OLD HISTORY RECORD OF EDIT LIST DESIGNATION REPRODUCTION
AND REGISTER GENERATED HISTORY RECORD OF EDIT LIST DESIGNATION
REPRODUCTION AT POSITION OF NEWEST HISTORY RECORD.

S430 DELETE OLDEST HISTORY RECORD OF REPRODUCTION HISTORY AND
REGISTER GENERATED HISTORY RECORD OF EDIT LIST REPRODUCTION AT
POSITION OF NEWEST HISTORY RECORD.

S451 CLIP DESIGNATION REPRODUCTION ?

S452 GENERATE HISTORY RECORD OF CLIP DESIGNATION REPRODUCTION WITH

DISC INTERNAL ID.

S453 DOES CURRENT REPRODUCTION HISTORY CONTAIN HISTORY RECORD OF
CLIP DESIGNATION REPRODUCTION FOR SAME CLIP ?

S454 DELETE OLD HISTORY RECORD OF CLIP DESIGNATION REPRODUCTION AND
REGISTER GENERATED HISTORY RECORD OF CLIP DESIGNATION
REPRODUCTION AT POSITION OF NEWEST HISTORY RECORD.

S455 DELETE OLDEST HISTORY RECORD OF REPRODUCTION HISTORY AND
REGISTER GENERATED HISTORY RECORD OF CLIP DESIGNATION
REPRODUCTION AT POSITION OF NEWEST HISTORY RECORD.

S456 RECORD DISC INFORMATION FILE.